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<p>(21) International Application Number: PCT/NL95/00318</p> <p>(22) International Filing Date: 22 September 1995 (22.09.95)</p> <p>(30) Priority Data: 9401566 26 September 1994 (26.09.94) NL 9401885 11 November 1994 (11.11.94) NL</p> <p>(71) Applicant (for all designated States except US): SALLMET-ALL B.V. [NL/NL]; Kanaaldijk O.Z. 3, NL-8102 HJ Raalte (NL).</p> <p>(72) Inventor; and (75) Inventor/Applicant (for US only): REINDERS, Johannes, Antonius, Maria [NL/NL]; Oude Warkenseweg 1, NL-7231 PE Warnsveld (NL).</p> <p>(74) Agent: SCHUMANN, B., H., J.; Arnold & Siedsma, Sweet-inkplein 1, NL-2517 GK The Hague (NL).</p>		<p>(81) Designated States: AM, AT, AU, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LT, LU, LV, MD, MG, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TT, UA, UG, US, UZ, VN, European patent (AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG), ARIPO patent (KE, MW, SD, SZ, UG).</p> <p>Published <i>With international search report.</i></p>
(54) Title: COVER FOIL WITH HEAT-ACTIVATED LAYER		
<p>(57) Abstract</p> <p>The invention provides a light-transmitting cover foil intended to be arranged adheringly to a surface, for instance the surface of a carrier plate, optionally bearing information such as letters, numbers, images or the like, which foil consists of a laminate comprising: a first layer plastically deformable only at a relatively high first temperature, for instance in the range of 120 °C - 200 °C and comprising for instance polycarbonate, PMMA, PVC, ABS, PP, PE, which first layer is provided before, during or after joining together to the other layers with a structure, for instance a texture and/or pattern pressed out of its main surface by exerting pressure and increasing temperature to at least the said first temperature, for instance by applying a heated profile roller; a second layer adhered thereto consisting of a dimensionally stable carrier layer comprising for instance polycarbonate, PMMA, PVC, polyester/PET, ABS; and a third layer adhered thereto which is meltable and thus thermally-activated at a relatively low second temperature, for instance in the range of 50 °C - 90 °C and which consists of a hot-melt layer or glue layer, comprising for instance EVA, EEA, EBA, EMA, GBA or other low-melting plastics including polyolefins and copolymer esters, polyacetate esters, softened PVCs; which said layers are mutually connected by adhesive agents, for instance by making use of coextrusion.</p>		

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COVER FOIL WITH HEAT-ACTIVATED LAYER

The invention relates to a light-transmitting, for instance transparent, cover foil intended for adhesion to an optionally information-carrying surface.

Such a cover foil is known. This known foil
5 comprises a first layer of polyester and a pressure-sensitive or heat-activated glue layer connected thereto.

It is an object of the invention to embody a cover foil such that it can offer a combination of two aspects, that is, a first layer provided with a structure
10 and a heat-activated glue layer. The existing structure may not be adversely affected when the glue layer is activated.

The described, known foil does not meet these requirements.

15 It is therefore an object of the invention to provide a light-transmitting cover foil which has a structure, for instance a texture and/or a pattern pressed out of its main surface, while provisions are also present to adhere the foil to a surface for covering
20 using simple means and without adversely affecting the existing structure.

In respect of the above the invention provides a light-transmitting cover foil intended to be arranged adheringly to a surface, for instance the surface of a
25 carrier plate, optionally bearing information such as letters, numbers, images or the like, which foil consists of a laminate comprising of:

a first layer plastically deformable only at a relatively high first temperature, for instance in the
30 range of 120°C - 200°C and comprising for instance polycarbonate, PMMA, PVC, ABS, PP, PE, which first layer is provided before, during or after joining together to the other layers with a structure, for instance a texture and/or a pattern pressed out of its main surface by

exerting pressure and increasing temperature to at least the said first temperature, for instance by applying a heated profile roller;

a second layer adhered thereto consisting of a dimensionally stable carrier layer comprising for instance polycarbonate, PMMA, PVC, polyester/PET, ABS; and

a third layer adhered thereto which is meltable and thus heat-activated at a relatively low second temperature, for instance in the range of 50°C - 90°C and which consists of a hot-melt layer or glue layer, comprising for instance EVA, EEA, EBA, EMA, GBA or other low-melting plastics including polyolefins and copolymer esters, polyacetate esters, softened PVCs;

which said layers are mutually connected by adhesive agents, for instance by making use of co-extrusion.

Attention is drawn to the fact that polyester/PET is excluded as material for the first layer.

The invention is based on the insight that the structuring of the first layer can take place in advance and that due to the relatively high softening temperature of the applied material, in the order of for instance 180°C, when the glue layer is activated, for instance at a temperature of 70°C, the first layer including its said structure is not affected, while the glue layer is nevertheless fully activated so that the cover foil can be adhered effectively to the surface for covering.

The second layer consisting for example of polyester is to a large degree non-stretch and non-shrink. This layer also makes possible heating of a strip of cover foil in a laminating machine without this resulting in a softening of the total cover foil such as to limit the ease of handling thereof.

A specific embodiment has the special feature that the first layer and the second layer consist of one integral, chemically substantially homogeneous layer. Attention is once again drawn to the fact that polyester

is excluded as material for the first layer. In this case both integrated layers must therefore consist of a material from which polyester/PET is excluded.

A specific embodiment has the special feature
5 that the adhesive agents comprise an adhesion-enhancing activation of at least the adhesive surface, for instance a corona treatment, particularly in the case of polyester and polypropylene. Other related treatments such as an ion bombardment may also be appropriate.

10 The adhesion between the diverse layers can in principle take place in any suitable manner. A specific embodiment is that in which the adhesive agents comprise an adhesive layer such as a layer of primer adhering to both the surfaces for adhesion.

15 All suitable means can be considered to provide the first layer with a structure. A specific embodiment is that in which the first layer is provided in advance with a structure by a mechanical, chemical and/or physical treatment or with a covering layer forming a
20 structure, for instance by vapour-deposition, sputtering or the like.

In general the softening temperature of the first and third layer will have to differ substantially, for instance in the order of at least 30°C. It is in any
25 case necessary to avoid the structure of the first layer being adversely affected when the cover foil is heat to stick it onto a surface for covering.

In order to ensure a good UV-stability the laminate can comprise a UV-blocking layer, for instance a
30 lacquer layer, present at a suitable position.

CLAIMS

1. Light-transmitting cover foil intended to be arranged adheringly to a surface, for instance the surface of a carrier plate, optionally bearing information such as letters, numbers, images or the like, which foil
5 consists of a laminate comprising of:

a first layer plastically deformable only at a relatively high first temperature, for instance in the range of 120°C - 200°C and comprising for instance polycarbonate, PMMA, PVC, ABS, PP, PE, which first layer is
10 provided before, during or after joining together to the other layers with a structure, for instance a texture and/or pattern pressed out of its main surface by exerting pressure and increasing temperature to at least the said first temperature, for instance by applying a heated
15 profile roller;

a second layer adhered thereto consisting of a dimensionally stable carrier layer comprising for instance polycarbonate, PMMA, PVC, polyester/PET, ABS; and

a third layer adhered thereto which is meltable
20 and thus heat-activated at a relatively low second temperature, for instance in the range of 50°C - 90°C and which consists of a hot-melt layer or glue layer, comprising for instance EVA, EEA, EBA, EMA, GBA or other low-melting plastics including polyolefins and copolymer
25 esters, polyacetate esters, softened PVCs;

which said layers are mutually connected by adhesive agents, for instance by making use of co-extrusion.

2. Cover foil as claimed in claim 1, wherein
30 the first layer and the second layer consist of one integral, chemically substantially homogeneous layer.

3. Cover foil as claimed in claim 1, wherein the adhesive agents comprise an adhesion-enhancing activation of at least the adhesive surface, for instance

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a corona treatment, particularly in the case of polyester and polypropylene.

4. Cover foil as claimed in claim 1, wherein the adhesive agents comprise an adhesive layer such as a
5 layer of primer adhering to both the surfaces for adhesion.

5. Cover foil as claimed in claim 1, wherein the first layer is provided in advance with a structure by a mechanical, chemical and/or physical treatment or
10 with a covering layer forming a structure, for instance by vapour-deposition, sputtering or the like.

6. Cover foil as claimed in claim 1, wherein the laminate comprises a UV-blocking layer, for instance a lacquer layer.

INTERNATIONAL SEARCH REPORT

International Application No
PCT/NL 95/00318

A. CLASSIFICATION OF SUBJECT MATTER

IPC 6 B32B27/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 6 B32B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

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A	EP,A,0 207 440 (KURARAY CO. LTD.) 7 January 1987 -----	1

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☒ Patent family members are listed in annex.

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Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+ 31-70) 340-2040, Tx. 31 631 epo nl,
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information on patent family members

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